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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,761	10/24/2003	Gin-Der Wu	ALIP0018USA	2760
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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116				
			EXAMINER SERROU, ABDELALI	
			ART UNIT 2626	PAPER NUMBER
			NOTIFICATION DATE 06/27/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/605,761

Applicant(s)

WU, GIN-DER

Examiner

Abdelali Serrou

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (hereinafter referred as, AAPA) in view of Ehara (U.S. 6,804,639).

The AAPA teaches a method and system for calculating pitch estimation of a sound signal with a voice processor, the sound signal comprising a plurality of sound data, the method comprising the steps of:

providing an initial value to a lag parameter; using the voice processor to calculate an autocorrelation value according to the lag parameter; storing the lag parameter and the corresponding autocorrelation value in a memory; repeating the above steps until reaching a predetermined value, that is equal to a cycle number of the digital sound data; and comparing the plurality of autocorrelation values stored in the memory to find a maximum autocorrelation value and calculating a pitch estimation of the sound signal according to the lag parameter corresponding to the maximum autocorrelation value (see specification, page 10, [0009]).

The AAPA does not explicitly teach the setting the initial value of the lag parameter to 1; applying a first, second, and third increment; and using the voice processor to compare the autocorrelation values with a first threshold value, wherein when the autocorrelation value is less than the first threshold value, the lag parameter is increased by the first increment, and when the

Art Unit: 2626

autocorrelation value is larger than the first threshold value, the lag parameter is increased by the second increment, and when the autocorrelation value is larger than a second threshold value, the lag parameter is increased by a third increment.

Ehahra in the same field of endeavor teaches setting the initial value of the lag parameter to 1 (Fig. 5, ST106); setting a first increment, second, and third increment (Fig. 5, ST109 – ST111, wherein i is incremented until it exceeds 3); and using the voice processor to compare the autocorrelation values with a threshold value, wherein when the autocorrelation value is less than a first threshold value, the lag parameter is increased by a first increment, and when the autocorrelation value is larger than the first threshold value, the lag parameter is increased by a second increment, and when the autocorrelation value is larger than a second threshold value, the lag parameter is increased by a third increment (Fig. 5, step ST106 – “FINISH SELECTION” step).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine Ehara feature, of incrementing the lag parameter three times based on the result of comparison of the autocorrelation values versus a threshold, to the system of AAPA, and modify it to compare the autocorrelation values with a threshold value, wherein when the autocorrelation value is less than a first threshold value, the lag parameter is increased by a first increment, and when the autocorrelation value is larger than the first threshold value, the lag parameter is increased by a second increment, and when the autocorrelation value is larger than a second threshold value, the lag parameter is increased by a third increment. The advantage is to skip irrelevant steps (Ehara, col. 20, line 10) in order to save time and speed up the process of estimating a voice pitch.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chen et al. (U.S 5,884,010) teach a method of synthesizing a signal reflecting human speech, including the step of correlating two subsets samples in the memory, by determining and incrementing a time lag value between first and second subsets of samples corresponding to a maximum correlation. Dame (U.S 5,619,004) teaches a method and device for very determining the fundamental frequency of an input analog electrical signal. The method uses fine range autocorrelation and interpolation to calculate more precisely the exact pitch. Suzuki et al. (U.S 6,594,626) teach a voice encoding and voice decoding apparatus, wherein a pitch periodization method is performed while decreasing or increasing the lag of the leading used samples. Gao et al. (U.S 6,959,274) teach a method of improving the encoding and decoding of speech, wherein the pitch lag estimated and incremented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdelali Serrou whose telephone number is 571-272-7638. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A. Serrou
6/15/07


DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER